

WHAT IS CLAIMED IS:

1. A base station apparatus for delivering multimedia information to a plurality of mobile stations through a radio channel connected therebetween in a CDMA (Code Division Multiple Access) system, comprising:

a receive interface for receiving a frame having layered information components composing said multimedia information and a transmission priority of each of said layered information components;

an allocating device for allocating the frame with a higher priority to a channel with better quality of communication, based on said transmission priority;

a diffuser provided for each channel and for diffusing the frame allocated by said allocating device; and

a transmitter for transmitting the frame diffused by said diffuser.

2. A base station apparatus as claimed in claim 1, further comprising:

a diffusion code setter for setting a diffusion code for separating said channels to said diffuser; and

a notifying device for notifying said plurality of mobile stations of the diffusion code for separating said channels set by said diffusion code setter and the relation information for indicating the correspondence between said diffusion code and said

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channel.

3. A base station apparatus as claimed in claim 1, further comprising:

a transmission power adjuster for adjusting the transmission power of the channel to which said frame is allocated on the basis of said transmission priority contained in said frame.

4. A base station apparatus as claimed in claim 1, further comprising:

a diffusion coefficient adjuster for adjusting a diffusion coefficient of said frame on the basis of said transmission priority contained in said frame.

5. A base station apparatus as claimed in claim 4 wherein said diffusion coefficient adjuster adjusts a diffusion coefficient by adjusting a data rate, a coding coefficient or a transmission time.

6. A base station apparatus as claimed in claim 2, wherein said notifying device operates to notify said plurality of mobile stations of said diffusion code and said relation information through a paging channel intended for noticing said diffusion code for separating the channels.

7. A base station apparatus as claimed in claim 2, further comprising:

a traffic channel establishing device for establishing a traffic channel to a specific one of said mobile stations, said traffic channel being

intended for noticing said diffusion code for separating the channels, and wherein

said notifying device operates to notify said plurality of mobile stations of said diffusion code and said relation information through said traffic channel established by said traffic channel establishing device.

8. A contents provider system for delivering multimedia information to a plurality of mobile stations through a plurality of base station apparatuses, comprising:

a layering device for layering information components composing said multimedia information;

a frame creating device for creating a frame having said information components layered by said layering device and a transmission priority of each of said information components; and

a transmitting device for connecting a plurality of frames created by said frame creating device on said multimedia information unit and then transmitting said connected frames to said base station apparatus.

9. A contents provider as claimed in claim 8, further comprising:

a sampler for separating said multimedia information into n ($n = 1, 2, 3, \dots$) components, sampling said components with a specific sampling frequency (f), and then recording the sampling data,

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and wherein

said layering device operates to layer the sampling data recorded by said sampler as said information components.

10. A contents provider system as claimed in claim 9, further comprising:

a recording device for recording said multimedia information and a maximum sampling frequency (f_{max}) ($f_{max} = 2^n$ (n is an integer)), and wherein

said sampler operates to start the sampling of said multimedia information read from said recording device after passage of a start period of said multimedia information to which a half of a sampling period (t) defined by a sampling frequency (f) so that said sampling frequency (f) is made to be 2^k ($k = \{n - \text{defined number of layers } (m) + a \text{ (wherein } a = 1, 2, 3, \dots, m)\}$) and

said layering device operates to layer said sampling data as the a -th information component when said sampling frequency (f) sampled by said sampler is 2^k .

11. A contents provider system as claimed in claim 10, wherein said frame creating device operates to create a frame containing synchronous information for matching the start period of the multimedia information containing said information components to be received and recomposed by said mobile station.

12. A contents provider system as claimed in

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claim 8, further comprising:

an ID storing device for storing an information component ID for identifying the subject frame from the other frames in the frame created by said frame creating device.

13. A mobile station for receiving multimedia information from a base station apparatus through a radio channel connected in a CDMA (Code Division Multiply Access) system, comprising:

a receive interface for receiving a plurality of frames allocated to the channels respectively, said frames containing layered information components composing said multimedia information;

a reverse diffuser provided in each channel and for picking up the frame allocated to said channel by reversely diffusing a plurality of frames received by said receive interface with a diffusion code for separating the channels notified by said base station apparatus;

a determining unit provided in each channel and for determining whether or not the frame picked by said reverse diffuser meets the predetermined communication quality;

a recomposing unit for recomposing said multimedia information from the frame determined to meet the communication quality by said determining unit; and

an information output unit for outputting

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said multimedia information rearranged by said rearranging unit to an output unit.

14. A mobile station as claimed in claim 13, wherein the information outputted by said output unit can be recognized visually and acoustically.

15. A mobile station as claimed in claim 13, further comprising:

a guide output unit for outputting guide information of each of said information components contained in the frame determined to meet the predetermined communication quality level by said determining unit.

16. A mobile station as claimed in claim 15, wherein said guide information contains tariff information about the using fees of said information components.

17. A mobile station as claimed in claim 15 or 16, wherein said control unit operates to recompose multimedia information from the frame containing said information components to be intended to be used by the user of said mobile station, based on said guide information outputted by said guide output unit.

18. A mobile station as claimed in claim 13, further comprising:

a first measuring unit for measuring an S/N ratio of said frame on the basis of said transmission priority contained in said frame header defined by said base station apparatus;

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a second measuring unit provided in each channel and for measuring a frame error rate of an electric signal diffused by said decoder; and wherein

said determining unit operates to determine whether or not the frame error rate or the S/N ratio meets the predetermined communication quality level.

19. An accounting method for charging fees to a plurality of mobile stations to which multimedia information is to be delivered, comprising the steps of:

recording opening information for indicating whether or not each of said mobile stations opens each information component composing said multimedia information in a first recording unit;

recording a user ID for specifying each of said mobile stations in a second recording unit when said opening information of said mobile station recorded in said first recording unit is opened; and

when said opening information recorded in said first recording unit is opened, specifying each of said mobile stations on the basis of said user ID recorded in said second recording unit and performing an accounting process of each of said mobile station through the use of an operating unit.

20. An accounting method as claimed in claim 19, further comprising the steps of:

recording an information component ID for specifying said information component opened by each of

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said mobile stations in a third recording unit; and
charging the using fees for each of said
mobile stations according to said information component
ID recorded in said third recording unit.

21. An accounting method as claimed in claim 20,
wherein said information component ID contains
information about the using fee of said information
component.

22. In an accounting system for charging fees for
a plurality of mobile stations to which multimedia
information is to be delivered, each of said mobile
stations comprising:

a guide information output unit for
outputting guide information of information components
received thereby; and

a notifying unit for notifying an accounting
server of an information component ID for specifying
the information component opened by the user of said
mobile station and a user ID for specifying said mobile
station on the basis of said guide information
outputted from said guide information output unit, and

said accounting server comprising:

a database for recording accounting
information and information on a using fee of said
information component provided in each of said mobile
stations; and

a control unit for performing an accounting
process with respect to said accounting information

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recorded by said database specified by said user ID notified by said notifying unit, based on said information component ID notified by said notifying unit and said information on the using fees recorded in said database.

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